

HISTORICAL DATA FOR KARST PHENOMENA IN THE PROVINCE OF MACEDONIA, GREECE (XVII-XX C.)

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In the course of millions of years the geological and geographic conditions had formed various karst phenomena on the Balkan Peninsula. The most typical and well known of these karst formations are the caves in particular. They can be seen as an integral part of our common natural and cultural heritage and always have drawn the attention not only of scientists but of common people as well. The caves appeared to be objects of religious, knowledgeable and exploration interest for local people and foreigners since the remote past. In the course of time, the exploration of karst and caves became more intensive and the descriptions of objects became more detailed, accordingly to the achievements of the science at that time. The availability of such data increases since 17 c, when more and more local and foreign explorers (mainly Ottoman, French, Russian, Austro-Hungarian and British authors) begin to travel, write and publish their impressions about the European part of Ottoman Empire, i.e. the Balkans. The descriptions of karst phenomena appear mainly in the travel notes of the explorers and voyagers of that period. They are different in topics and style, depending on the point of view of the authors – they vary from general passing descriptions of places and sites, to detailed information about certain karst objects. In such context, this work is an attempt to present chronologically some of the above mentioned data about karst phenomena in the South-East part of the Balkans - the province of Macedonia, nowadays Greek territory, which appeared to be little known in the speleological community.

First data about karst and caves in the period 17-20 c. we could find in the books of Evlia Chelebi – one of the most famous Ottoman voyagers, who lived and worked in 17 century. His numerous wanderings were described in 10 parts of manuscript travel notes. His books became popular and were fully recognized as a historical source only after their publishing in the end of 19 and the beginning of 20 c. According to the Bulgarian translation (Chelebi, 1972: 168), a part of volume VIII of the travel notes is dedicated to Chelebi's journey from Istanbul to Thessalonica in 1667. Here the author describes the mountains west from Seres and mentions that he saw there "*one big high rock, called Gerdek-kaià, where are many hundreds of caves*", without giving further information about the site.

New contribution in enlarging of the knowledge about the karst in the area, we can find in the book of 2 volumes of E. M Cousin ry: "Voyage dans la Macedonie, contenant des recherches sul l'histoire, geographie et les antiques de ce pays", published in 1831 in Paris, which we treat according to the interpretation of Bulgarian authors in the present article (Shopov, 1907: 784, 788-789; Tsvetkova, 1975: 375-376). The author was a general consul of France in Thessalonica in 1773, 1783-1785 and 1786-1792. During this period he travelled many times in South Macedonia, mainly in the regions of

Thessalonica, Seres, Drama, Kavala, Edessa). He was interested in history, geography, archaeology, geology, etc. and was a member of many scientific institutes and organisations (the French Institute, the Munich Kings Academy, the Marseille Kings Academy and the Antiquity Society in France, etc). Concerning karst phenomena, here Cousinéri gives elaborated data about beautiful stalactite caves near Voden (now Edessa), but in more details describes a spring cave, which used to be an ancient sanctuary. The Chapter 11 of his work presents an emotional description of Cousinéri's voyage to this cave, which in the old pagan times used to play an important role in the cult of the local tribes. This cave was situated in foots of the mountain Zmiinitza (probably now Menikio). To reach the cave, Cousinéri from Drama went to Prosechen (now Prossotsani), and then he was traveling one hour along the stream of Panega to the Mt. Zmiinitza. The entrance of the cave was small and almost fully covered with big stones. Cousinéri had to kneel and crawl in order to enter the cave. When he went inside, he was rewarded by a view of a shrine, where some unknown nymph appeared to be worshipped in the old times by the local people. The cave was round. Its upper part had a shape of almost regular vault arch, twenty five steps long and fifteen steps high. On the left side were situated rows of big stones, similar to these on the entrance of the cave; it seems that they were used for seats for the spectators of the cult ceremonies. Inside there was a spring of clear water, which flew through the cave. Cousinéri noticed also an old construction, made under an opening, from which inside the cave penetrated mysterious light. Probably this construction was designed for a staircase, through which people used to enter the cave, where the nymph was worshipped in the past. Cousinéri knew well how the ancient people respected the springs and the rivers and that is why he was sure that this cave was a temple for worshipping of a deity of the water. In this book Cousinéri presents interesting data about the continuation of this cult in 17 c. and states, that the population of the surroundings still respects this cave as an ancient sanctuary. Close to the cave Cousinéri discovered also ruins of massive old buildings, which could be remains of ancient settlement. In spite of the statement of the author, that this cave was situated in Mt. Zmiinitza (now Menikio) near to the stream of Panega, the available data give us reason to suppose, that here Cousinéri describes the cave Maara, which is situated in the foots of Mt. Bozdag (now Falakron), near Drama, Greece. It seems that Cousinéri's work is also the first known written source, which reports about the existence of this famous water cave and which explains the origin of the waters flowing inside the cave.

Apart from the information of the above historical site, in the same description, Cousinéri mentions about another karst phenomenon - "losing of surface waters". Based on the story of the Thessalonica bishop, Cousinéri writes about a small river, situated one hour far from Nevrokop (now Kato Nevrokopi), which was losing its water in the sand in this region. The same river, according to the legend, was flowing under the mountains and appeared again in Drama eparchy, in the above mentioned cave, the same ancient nymph shrine. The Thessalonica bishop assured Cousinéri, that local people were curious to know where this river flows underground, that is why they threw millet seeds in Nevrokop, where the river disappeared. After three hours these millet seeds were spotted in the spring of the mentioned cave, by people, who stayed there exactly for this purpose. This information, which gives us Cousinéri, shows in practice the experiment, now known as "water tracing". These data are the first known ones of such experiment at the time of 17 c.

Looking at the book of Cousinéri in the above context, his work appears to be among the first printed known sources, which gives us more detailed information about the karst phenomena and historical caves on the Balkans.

The description of karst phenomenon - "losing of surface waters" can be found also in the travel notes of the Russian national Petar Ageev (monk Partenii) from 1839. In its Bulgarian translation (Kozhuharova, 1986:193-194) we find a description of the travel of Petar Ageev from vill. Perelik, Blagoevgrad district, Bulgaria, to the monastery St. John Prodromas) (now probably Timios Stavros Monastery) North-East from the town of Seres:

"We were walking in the foothills of the steep mountain through the gorge: on the right there was a deep abyss, somewhere down was running fast a big river and the water was babbling... After that we went down to the valley, where flew the river, passing below a stone bridge. We looked under it – we could not see even a drop of water and we were very surprised why. Up there was coming plenty of water and here there was no even a drop. Where this water flows? We were very surprised of this fact. We went down again. Now from our right side was the mountain and from the left – a dry valley. Walking on our way, we were wondering at this phenomenon - why on the top was flowing a river and down everything was dry".

Unfortunately in these travel notes there are no data, according to which we could exactly localise the mentioned phenomenon. Knowing the terrain, we could suppose that the losing of water happened in the region of some of the mountains Orvilos, Vrontou or Menikio in Greece.

The Russian national Egor Yuzakov, gives us data about cultural remains in a cave, related to Christian religion and probably dated back to the mediaeval times. He was a collaborator of the prestige Russian magazine "Suvremennik" (Contemporary) and in 1860 published his travel notes "One Month in Bulgaria". Here he describes in details his visit to a small cave church 5 sazena long [1 sazen - 2,134 m], situated on the hill Byala charkva (i.e. The Hill of the White Church)(unknown Greek name) near to the town of Kukus (now Kilkis), (Kozhuharova, 1986:291):

"The entrance of the cave was so low and small, that we had to fold ourselves in order to enter. Anyway, we entered the cave with candles... According to the legend here used to live someone hermit, even before the conquering of the country by the Turks. The walls of the cave were painted (probably the hermit was an artist) with images of the saints in human size. The images and inscriptions were almost deleted. In the cave on the right, half of its height, there was a niche – probably there was the bed of the hermit".

Unfortunately, this description again does not give us enough data, according to which we could localise the site, described in these travel notes.

The famous Bulgarian historian, ethnographer and geographer Vassil Kanchov publishes different editions series of articles, which could give us an idea about his research activity in the regions of Macedonia, still remained in the confines of Ottoman Empire. Besides this, the author reports about his visits of karst terrains and describes typical limestone rocks, sinkholes and springs. For instance, in (Kanchov, 1891: 47-52, 93-101) the author describes the sinkholes of the water in the Big Prespa's lake and points on the presumed underground connection between the lake and the karst spring near the monastery "St. Naum", Ochrid region. The cited work presents also the local legend explaining this phenomenon, which shows the various interests of the explorer. In other work (1896: 229- 239) V. Kanchov competently describes the movement of the karst waters in the south slopes of Ali Botush /Slavianska (now Orvilos) and Bozdag (now Falakron) near vil. Zarnevo (now Kato Nevrokopion). In this work the author gives general description of the vicinity and concludes, that several rivers meet and create *"a high-water river, which flows hundred meters and then enters a cave under the mountain"*. Then the author adds:*"In this way the river flows through the mountain chain and again appears from the south side of the massive, not far from the Kalapod, under the name of Panega"*, (i.e. from the cave Maara).

A special attention Kanchov dedicates to the description of sinkhole of the water (Kaatavotra), which is near vill. Ohrio:

"When we approached the mountain, before our eyes stood a giant cliff and we heard loud noise. We saw the water only when we reached the foothill of the cliff... The water was quite high. It steeply jumps into an underground hole...A vertical sharp cliff, 50 m high and wide, stands right above the mouth. On its lower end is the mouth of a triangle crack about 5 m high... The water falls inside from 2 m high with terrible noise...It is not possible to see the

bottom. The local people say, that when the water dries up, inside can be entered up to 50 m under the cliff and then is possible to walk, because the bed of the river is narrowing and branch out ... Only here the water does not disappear. There is one more hole north from the first one. There is flowing a small river. The hole is very narrow... ”.

In the same publication V. Kanchov reports about caves in this region. Here he describes the springs of the river Pesternik, an affluent of the river, coming from the vill. Katafito (20 km western from Kato Nevrokopi in the south slope of Orvilos Mt.:

"The spring is situated in a deep gorge in which upper end are seen two limestone caves. From these caves springs the water enough to move 3-4 water mills. These springs, according to the stories of the local people, are periodical: several years they flow, then several years dry up. The locals say that about 7 years in turn the springs flow and then 7 years stay dry... There is no other water, which springs from this region of Orvelos."

In Kunchov, V., 1894: 252, the author describes also for the existence of some rock shelters in the surroundings of the town of Siderokastro and later (Kunchov, V., 1894:195) mentions about one little cave close to the road near Loutra vill.

The contribution of V. Kanchov to the karstology and research of the caves not only in Bulgaria, but also on the Balkans deserved to be a subject of a separate work.

More full and detailed descriptions of karst phenomena gives us the book of Herman and Karel Scorpil, published in France: "Sources et pertes des eaux en Bulgarie" (Springs and sinkholes in Bulgaria) (Scorpil, H. et K., 1898), where as a result of specific terrain explorations are presented over 100 karst phenomena (uvalas, caves, springs). In the book are included also 21 figures, which clearly illustrate the hydrogeological connections in the explored karst regions. In this remarkable book there is a very interesting chapter: "Panega in Macedonia". This chapter is worked over the information of the French geologist O. Viquesnel, published in his book "Voyage dans la Turquie d'Europe", Paris 1868. II. Here the author reports, that near vill. Lissa in the north foots of Bozdag (Falakro) there is a sink hole, where the Eleshka or Lissa River loses its waters. After passing the underground distance of 5 km, the river, called Panega, flow out of a cave in the south foots of the mountain Nort-West from Prossotsani (Drama region). The French geologist mentions that, the mountain is formed of limestone and the sink hole, called Eleshki Douпки is situated on 610 m a.s.l., but the cave is on 134 m a.s.l. According to the author, the falling of the underground river is about 100 m for 1 km distance, which shows the existence of big waterfalls. There was a story, that three peasants went into the cave and after three hours walking along the bank of the underground water, they reached a waterfall, which thunder was heard for a long distance. Obviously, the publication of Viquesnel, respectively of K. Scorpil, tells us about the cave Maara near Drama. Further information about karst phenomena in the region could be found in the book of K. and H. Scorpil and in the original publication of the French author.

After the Berlin congress in 1878, the united efforts of the Great European powers at that time led to returning of territories from the newly liberated Bulgarian lands again under the Ottoman domination. These territories were situated mainly in the regions of Macedonia and Odrin Thrace. The Bulgarians from Macedonia and Odrin Thrace began their own organised armed struggle for liberation from Ottoman yoke. Several revolutionary organisations were established (1893 - the Internal Macedonian-Odrin Organisation; 1895 - the Supreme Macedonian-Odrin Committee), which took the leadership of these liberation fights. In some occasions, the organised groups of rebels used the caves for shelter or depots, for which we have information in the archive documents. Maybe one of the most interesting data is related to the cave Kape (Agio Analipsi Cave) near Krushevo (now Aladohorion), where in 1898 and from 30 January to 6 February 1903 were looking for shelter the rebels, led by the famous voivodes (leaders) Gotze Delchev and Yane Sandanski. A description of this cave and the events related to the above process, we find in the works of Bulgarian authors (Miletich, 1927: 39, 147;

Javorov, 1965: 145-152). More information about availability of caves in the near by area – next to vill. Banitza (now Karie), situated in the East slope of the mountain Sharlia (Ori Vronodus) can be found in the memoirs book of S. Takev (Panajotov and all. 1978: 186). In the memoirs of Angel Andreev (Miletich, 1926: 71) from the same period, are mentioned some caves on the shore of the Great Prespa Lake. The author reported that during the Ilinden-Preobrazene uprising in 1903, 4 rebels tried to hide in the caves near Psarades vill., but the Turkish soldiers found them. The rebels Dineta and Krustina from the village were killed, but two other rebels ran away. We suppose that this dramatic incident happened in one of the caves near Psarades vill., well known today: Raksantes, Rati, Tserna, Kanali, Bela Pes, or Eserets, etc.

In 1993 in Bulgaria was published the book of P. G. Mandzukov "Forerunners of the storm"(Mandzukov, 1993: 241-231). The author, who was an anarchist, describes his life, part of which was connected with the fighting for the liberation of Macedonia from Ottoman domination. The memoirs of Mandzukov, dated back to the summer of 1899, present interesting information, which has direct link to the topic of this article. Firstly, we have data about the existence of many caves in the surroundings of village Guyredzik (now Granitis). Here we find again descriptions of the karst phenomena - cave-sinkhole (Katavotra near Ohrio vill.), the underground marsh of the river and its appearance in the spring cave Maara on the south slope of mountain. Much more important is the profound information of the karst phenomena in the mountain Bozdag (Mt. Falakron, Greece). The author reports about numerous conical uvalas on the plateau parts of the massive. He also writes about the penetrating of the band he belonged to, in a big and beautiful cave below the peak, called Kalam Bourgas (probably now Hinotripa, 2232 m a.s.l.). Let us see some fragments of this impressive and interesting description:

“On the east, very close to the summit, the south part of one of the backsets ends with high, limestone rock, where is wide opened, arch entrance of the cave. The snow at the entrance, fallen during the winter and warmed in the summer, lays on several metres thick layer of ice, from where flows water, that loses into the cave. We enter under the cave vault, which ends with an opening inside ... Several tens of metres we walk bowed down in the narrow low corridor. At one place we hardly move one shoulder forward – so narrow is the corridor. Suddenly the corridor widens...From everywhere drops water. As we walk, our torches light over the end parts of giant columns, raising from below or hanging above our heads... fine lace curtains, hanging from the vault appear and vanish before our eyes ... We keep going forward and down. Suddenly the light of our torches appear below us, somewhere far away – they are reflected in the quiet surface of the lake over which we stand on a ground over the rock...”.

Further the author notices:

“From the first day we noticed, that about noon arrived a caravan of about ten of horses on the south path to the cave. Every day this caravan came to the entrance of the cave, stayed for about 2-3 hours and returned with loaded horses back on the path to the town. This caravan carried ice for the town of Seres...”.

In the period of the Balkan wars (1912-1913) and the First World War (1915-1918) were undertaken several complex scientific expeditions, led by the famous Bulgarian archaeologist Bogdan Filov and were occasionally explored two caves. The first one is located close to vill. Elefteres, close to Eleftheroupoli, the region of Kavala. About this cave the author writes:

“We were told also, that close to one of the neighboring peaks, named “Orlov vrah” (Eagle’s peak) was situated some cave, which seemed to be used in the prehistoric times. Here the local people used to find fragments of broken pottery and a plate with inscription, from which I was promised to receive an imprint” (Filov, 1993: 35).

The location of the next described cave is in the surroundings of Ludzha vill. (probably Thermes, south

from Xanthi), where is situated the ancient Trayanopolis. About this site the author writes:

“Half an hour walking above the village in Sarelski dol (Coomb of Sarel) there is a prehistoric cave, which we visited and inside of one of its branches we found fragments of Neolithic pottery” (Filov, 1993: 101, 113).

We do not know which are the caves mentioned here and whether they are explored by speleologists and archaeologists. At the moment we do not have any data about undertaken explorations of these sites and we suppose that the future efforts in this field would be very useful.

The archive and published materials, examined in the present article, could be used as an additional source of information for availability of caves in the region of the province of Macedonia, Greece, inhabited from 17 to the beginning of 20 c. with mixed population of Bulgarians, Greeks and Turks. The detailed analysis and careful consideration of these data could widen or even find a new starting point for various exploration initiatives of the karst in the area, which is still little known from speleological point of view.

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